REMARKS

Reconsideration and allowance of all claims are respectfully requested.

The above amendments address the issues on pages 2-3 of the office action. Additional amendments simply place the dependent claims in proper dependent form and provide antecedence for the preamble elements of the claim. No new matter has been added by the amendment.

Regarding the Examiner's query on "what are the predetermined responses?" it is clear from the specification that the predetermined responses relate closely to the type of pest detected by the system. This is evident from, for example, page 7, line 30 to page 8, line 2 as well as from example 2 on page 18. Furthermore, the examiner raises a clarity issue relating to what "the performing and results of the software modules incorporating self-learning and limitation is not having a relationship with the rest of the limitation in the claims". However, from the specification, page 9, line 6-11 and page 9, line 25 through page 10 line 2, it is clear how this self-learning cycle works, giving adequate basis and support in for the stated claim the description and the limitation.

Claims 1 - 9 and 11-14 are patentable under 35 U.S.C. 103(a) over Gardner, Jr. et al. (US 6,937,156) in view of Shima (US 7,239,720) and Cooper et al. (US 6,885,299).

Shima is non-analogous art

The Shima patent relates to a video surveillance system where the built-in software is adapted to determine what type of body is moving in the picture. For all the examples mentioned in the Shima document movement is an essential feature which does not relate to the claimed invention. Shima does not, because of the matter with which it deals, logically commend itself

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to the attention of one of ordinary skill in the art in considering the problem solved by the claimed invention. See *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

Because Shima is neither in the field of Applicant's endeavor, nor reasonably pertinent to the particular problem with which the applicant was concerned, it is non-analogous art and should be removed as a reference.

Cooper is non-analogous art

The examiner states that Gardner fails to disclose collected data being encrypted before being transmitted to the local server and thus relies on Cooper as teaching encryption of data relating to locating and monitoring insects. However, Cooper is non-analogous art and cannot render the present invention obvious because it is neither in the field of Applicant's endeavor, nor reasonably pertinent to the particular problem with which the applicant was concerned. Cooper should be removed as a reference. Cooper is not in the field of Applicant's endeavor, which is pest control, as Cooper relates to geopositionable expendable sensors used to monitor surface conditions and has nothing to do with pest control.

"[A] patentable invention may lie in the discovery of the source of a problem even though the remedy may be obvious once the source of the problem is identified. This is part of the 'subject matter as a whole' which should always be considered in determining the obviousness of an invention under 35 U.S.C. § 103." *In re Sponnoble*, 405 F.2d 578, 585, 160 USPQ 237, 243 (CCPA 1969).

Cooper is also not reasonably pertinent to the particular problem faced by Applicant. The particular problem solved by the present application is the need to continuously and

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automatically detect the presence of a wide variety of pests in a given area such as a building, determine their nature, and take actions to eliminate the pests on the basis of that information while maximizing safety and hygiene and minimizing the need for human presence. Cooper has nothing to do with that. Cooper does not, because of the matter with which it deals, logically commend itself to an inventor's attention in considering this problem. See, *Wang Laboratories Inc. v. Toshiba Corp.*, 993 F.2d 858, 26 USPQ2d 1767 (Fed. Cir. 1993).

Cooper has nothing to do with pest control and never mentions pest control at all. Cooper deals with a sensor system having air-deployed sensor pods for monitoring for the presence of contamination by biological, chemical, or radioactive agents on a terrain surface. No inventor would think to look to Cooper for solutions to pest control problems. Therefore, Cooper is not analogous art.

Because Cooper is neither in the field of Applicant's endeavor, nor reasonably pertinent to the particular problem with which the applicant was concerned, it is non-analogous art and should be removed as a reference.

The Examiner has not produced a *prima facie* case of obviousness

"To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations." *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) (emphasis added).

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Gardner, Shima, and Cooper, taken alone or in combination, do not teach or suggest all the limitations of Claim 1. For example, Gardner, Shima, and Cooper do not teach or suggest means for identifying the type of pest or software modules incorporating self-learning in response to generated data and predetermined responses in view of incoming collected data. The Examiner allows that Gardner does not teach these limitations, and therefore relies on Shima and Cooper.

Turning to the Gardner reference, US 6937156, the Gardner reference is solely directed to a capacity sensing method, see for example abstract and the definition of field of the invention in column 1 lines 10-14. The capacity sensor operates such that as an object, for example an insect, is stationary on the surface of the sensor, the capacity (change in voltage) is registered and used as an indication that a pest is present. It should also be noted that the Cooper reference, discloses a sensor system for monitoring the presence of contamination with one or more contaminating biological, chemical and/or radioactive agents on a terrain surface.

The Gardner reference relates to a system specifically designed to register pests by capacitive means. The inclusion of a video based system as disclosed in Shima is not hinted nor suggested in the Gardner disclosure and appears to be a fairly remote possibility in that the entire software package together with the hardware needs to be substantially altered in order to fit into a pest control device. It is therefore submitted that the skilled person would not consider introducing the teachings of Shima into the Gardner reference. If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

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The same reasons are applicable for the combination of Gardner with Cooper in that the Cooper reference refers to a chemical or biological substance on a terrain surface and as such does not introduce any means for detecting moving objects or movable objects, such as for example pests and does not comprise software which may be able to map the behavior of pests either in a trap or in the immediate environment adjacent the trap.

Therefore, it appears that the examiner applies hindsight and pieces together a jigsaw puzzle of unrelated prior art in order to deprive the present invention of its inventive activity. "It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious." *In re Fritch*, 23 USPQ2d 1783, 1784 (Fed. Cir. 1992), quoting from *In re Gorman*, 18 USPQ2d 1885, 1888 (Fed. Cir. 1991). "This court has previously stated that one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." Id. quoting from *In re Fine*, 5 USPQ2d 1600 (Fed. Cir. 1988).

As furthermore, all the features of the present invention as defined in independent claim 1 are cooperating in an inventive manner in order to provide a novel and inventive pest control system with built-in checks and balances and a very high level of information output, the specific features of the system may not be considered as single detached features and therefore be deprived of their contribution to the inventive concept by singling out these features and comparing them to unrelated prior art as is the case with the Shima and the Cooper references.

The Examiner's reference to col. 1, l. 28-33 implies that all types of pest have unique characteristics which may be decided/determined from the change in capacitance of the electrode grid (801). This is of course not the case, as changes in temperature, humidity, dust etc will affect the capacitance. Furthermore, various types of pest have overlapping sizes, weights,

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moisture contents etc. The capacitance device is discussed in the description col. 8, l. 55-67 with reference to an insect detection device. It is submitted that Gardner does not disclose means for identifying all types of pests but merely and in best case only insects.

The present invention uses only one type of trap regardless of the pest. The system has means for detecting characteristics of the particular pest present in the trap. These characteristics are compared to earlier collected data in a database, and the type of pest is identified. After identification the trap is activated by commands from the central computer to carry out pre-determined responses (such as activating one or more means for exterminating the pest). The system furthermore has a "self-learning" capability, such that particular or unusual behaviour of an otherwise well known behavioural pattern for that particular spices of pest may be recorded and stored for further use in generating the appropriate pre-determined response.

As mentioned, an important feature of the present invention is the <u>software modules incorporating self-learning in response to generated data and predetermined responses in view of incoming collected data</u>, which is not taught by Gardner. The Examiner argues that Gardner teaches this feature inherently in col. 11, lines 13-17. However, the lines referred to by the examiner relate only to algorithms. It is acknowledged that the communication system as for example illustrated in fig. 1 of Gardner does require (trivial) software in order to handle information between the detection units and the data storage. Furthermore the software is also able to generate and prioritise alarms in response to collected data.

On the other hand, self-learning is not described nor is it suggested in Gardner. It is in this context not inherent in software, neither in general nor in the particular technical field of Gardner. Self-learning often requires fuzzy-logic software as for example Kohonen-networks, which are radically different from "algorithms".

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MPEP 2112 (IV) states that "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic <u>necessarily</u> flows from the teachings of the applied prior art." *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original) "The fact that a certain result or characteristic <u>may</u> occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic... "Inherency... may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted)

The presence of algorithms does not <u>necessarily</u> imply the existence of self-learning. Therefore, the Examiner's reliance on the doctrine of inherency is misplaced. It is therefore submitted that the reference by the examiner to col. 11, l. 13-17 stating that it is inherent, does not provide the software with self-learning abilities. The skilled person is in no way suggested or induced to even consider adapting the software of Gardener to be self-learning. It is therefore not obvious. Obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established. *In re Rijckaert*, 9 F.2d 1531, 28 USPQ2d 1955 (Fed. Cir. 1993).

Thus Gardner, Shima, and Cooper, taken alone or in combination, do <u>not</u> teach or suggest <u>all the claimed limitations</u>. Furthermore, there would be no motivation to combine the references in the manner proposed by the Examiner. The Examiner argues that such a combination would be obvious "so that the data transmission can be secured." However, data from pest identifiers is not typically private data that needs to be secured from unauthorized interception. Rather, encryption is used in the present invention to avoid disturbing or creating interference with other

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wireless communications taking place in the same area. That [the prior art] might incorporate elements which could be used in appellants' system does not render appellants' claims obvious when there is no suggestion of using these elements in substantially the same manner as appellants use them. *In re Donovan,* 184 USPQ 414, 421 (CCPA, 1975).

A number of traps/sensors may be arranged in a limited space, and at the same time mobile phones, wireless internet etc. may take place. By using encryption the signal from each separate trap/sensor may be isolated and transmitted without interfering with other transmissions and without itself being disturbed/distorted. Neither reference recognizes this problem or the solution. Therefore there would have been no motivation for the Examiner's proposed combination. In determining the differences between the prior art and the claims, the question under 35 U.S.C. 103 is not whether the differences themselves would have been obvious, but whether the claimed invention as a whole would have been obvious. *Stratoflex, Inc. v. Aeroquip Corp.,* 713 F.2d 1530, 218 USPQ 871 (Fed. Cir. 1983); *Schenck v. Nortron Corp.,* 713 F.2d 782, 218 USPQ 698 (Fed. Cir. 1983).

For at least the above reasons, Claim 1 is patentable over all references. At least because Gardner, Shima, and Cooper, taken alone or in combination, do not teach or suggest all the claimed limitations, and because there would be no motivation for their combination, it is respectfully submitted that the Examiner has not put forth a *prima facie* case of obviousness and that the rejection must be withdrawn.

The Shima reference is far removed from the present invention, and also the Cooper reference lies outside the technical field to which the skilled person having knowledge in the pest control technical field would seek information and hint in order to improve or solve a specific problem.

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Claims 2 - 9 depend from Claim 1 and share its patentable features and add further patentable limitations. Examples are given below.

Claims 2 and 3 refers to specific types of sensors useable depending on the class of pest (rodents vs insects). The Examiner cites to col. 5, lines 40-41 of Gardner as teaching a movement sensor according to these claims. A mercury switch (Gardener col. 5, l. 40-41) needs to be shaken requiring the rodent to come into contact with the switch either directly or indirectly by means of the trap per se. This however rules out a number of situations where pest activity may be present but which will not activate such a sensor. In col. 5 a few other sensors are discussed which all requires that a sensor be agitated or a light beam is broken. A number of events (leaves or litter being blown around, a finger from an operator etc.) having nothing to do with pests may activate these types of sensors, and thereby generate a wrong/faulty impression of pest activity at that particular location.

The types of sensors mentioned in claims 2 and 3 will not accidentally be activated, and therefore provide a security to the system which Gardner fails to do. This fact is especially important when seen in combination with the systems' ability for self-learning. If a number of events are recorded, and thereby influence the self-learning ability, which in fact are straws, leaves, litter or the like setting of the sensors, the self-learning routines will not reflect the real situation, and thereby generate unreliable results/alarms. It is therefore necessary, and a condition for the system according to the present invention, that a substantially foolproof identification of pests is conducted as well as reliable activity data collected. Gardner firstly does not have the self-learning ability, and consequently does not need absolutely reliable data.

Claim 5 adds that the system further comprises means for transmitting a status report on the current status of the detection unit at predetermined time intervals, and, additionally, is

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capable of transmitting alarm signals if/when action (activity) is detected in the detection unit. Gardner does <u>not</u> teach or suggest this feature.

The Examiner cites to Gardner as teaching "that the status report on the current status of the detection unit at predetermined time intervals." That does not speak to the element of transmitting alarm signals if/when action (activity) is detected in the detection unit.

In col. 6, lines 10-18 Gardner suggests that data may be stored in the sensor, and transmitted to the central server at a later point in time, for example when an operator initiates the procedure. The invention as disclosed in claim 5 operates in a different manner. Signals are transmitted to the central computer at predetermined intervals, regardless of there being any activity in the trap/sensor. This is done in order to ascertain that the sensor is operating properly and is online, which is very important for the proper functioning of the system. The further feature that data relating to activity in between the predetermined times when the sensor transmits to the central unit may also be carried out with the present invention.

Claim 6 adds that the central server comprises a database where data from the detection units as well as actions in response to such data is stored, and that the data by means of suitable software is used in order to predict possible causes of presence of pests, causes of alarm and/or suggest possible actions, and that the collected data is correlated and integrated with the database. Gardner does <u>not</u> teach or suggest this feature.

The Examiner cites to Gardner col. 7, lines 5 – 17 as disclosing the same features. This however is not the case. Gardner does not teach predicting causes of presence of pests or suggest responsive actions. Gardner does teach providing a report of traps that should be visited according to some determined schedule, but this is not in response to data from the detection units. The present invention, by employing more advanced sensors, which Gardner advises

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against, see section [0051], is able to online detect all necessary features in order to reliably determine the type and number of pests in the sensor/trap. This provides for substantial savings, even taken into account the more expensive hardware.

Obviousness is tested by what the combined teachings of the references would have suggested to those of ordinary skill in the art. It cannot be established by combining the teachings of the prior art to produce the claimed invention, absent some teaching or suggestion supporting the combination. Teachings of references can be combined only if there is some suggestion or incentive to do so. *In re Fine*, 5 USPQ2d 1596, 1599 (Fed. Cir. 1988).

For at least the reasons given above, the rejection of Claims 1 - 9 and 11-14 under 35 U.S.C. 103(a) over Gardner, Shima, and Cooper is improper and should be withdrawn.

Claim 10 is patentable under 35 U.S.C. 103(a) over Gardner, Jr. et al. (US2003/0213161) in view of Shima (US 7,239,720) and Cooper et al. (US 6,885,299), and further in view of Roberts (US 6,792,395).

Claim 10 depends from patentable Claim 7 and adds that the wireless means comprise GSM or GPRS.

As pointed out above, Gardner, Shima and Cooper do not describe, teach or suggest the claimed invention. Therefore, any further combination with additional references will also lead away from claim 10.

Roberts does nothing to add what Gardner, Shima and Cooper lack. For at least this reason, the rejection of Claim 10 under 35 U.S.C. 103(a) over Gardner in view of Shima and Cooper and further in view of Roberts is improper and should be withdrawn. Citing *In re Gordon*, 221 USPQ 1125, 1127 (Fed. Cir. 1984), the court pointed out, "the mere fact that the

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prior art may be modified in the manner suggested by the Examiner does not make the

modification obvious unless the prior art suggested the desirability of the modification". *In re*

Fritch, 23 USPQ2d 1783, 1784 (Fed. Cir. 1992).

Claim 15 is patentable under 35 U.S.C. 103(a) over Gardner, Jr. et al. (US2003/0213161) in view of Shima (US 7,239,720) and Cooper et al. (US 6,885,299), and further in view of Landwehr et al. (US 2005/0025357).

Claim 15 depends from patentable claim 1 and adds that the means for identifying the

type of pest comprises a digital camera and software programmed on the central system server
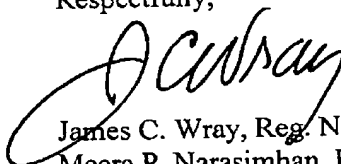
for image analysis or pattern recognition.

As pointed out above, Gardner, Shima and Cooper do not describe, teach or suggest the

claimed invention. Therefore, any further combination with additional references will also lead

away from claim 15.

Landwehr does nothing to add what Gardner, Shima and Cooper lack. For at least this

reason, the rejection of Claim 15 under 35 U.S.C. 103(a) over Gardner in view of Shima and

Cooper and further in view of Landwehr is improper and should be withdrawn. That [the prior

art] might incorporate elements which could be used in appellants' system does not render

appellants' claims obvious when there is no suggestion of using these elements in substantially

the same manner as appellants use them. *In re Donovan*, 184 USPQ 414, 421 (CCPA, 1975).

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CONCLUSION

Reconsideration and allowance of all claims are respectfully requested.

Respectfully,

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